REMARKS

1. ALLOWABLE SUBJECT MATTER

Claims 48, 50-54, 56-59, and 61 were allowed. Applicant thanks the Examiner for the indicated allowance of these claims.

2. PRIORITY/DECLARATION

The Office Action acknowledged Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c), filed on December 30, 2008, but stated that Applicant "has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e)" as "the claim for the benefit of US provisional application 60/471,813, filed December 30, 2008, is not timely."

As previously noted, Applicant's claim for the benefit of U.S. Provisional Patent Application Serial No. 60/471,813, filed May 20, 2003, was timely, but was inadvertently and through clerical error misstated as U.S. Provisional Patent Application Serial No. 60/471,873, filed May 20, 2003. Applicants are submitting a petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e).

The Examiner noted that, as a result of the clerical error, the Oath/Declaration was defective and the Examiner stated that "[a] new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required" and that "[t]he oath or declaration is defective because: '60/471,873' (page 1) should be --60/471,813--." A new declaration is submitted herewith correcting the citation to the previously filed U.S. Provisional Patent Application Serial No. 60/471,813.

3. CLAIM OBJECTIONS

Claims 47, 49, and 60 were objected due to an informality. Specifically, the Examiner noted that, before "stiffness parameter" (claim 47, line 11; claim 49, line 9; claim 60, line 10), there should be inserted the term "said."

Claims 47, 49 and 60 have been amended accordingly. Reconsideration and withdrawal of this objection is requested.

4. 35 USC § 112, 2ND PARAGRAPH REJECTION

Claims 47, 49, and 60 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner supported this rejection by presenting a query, stating "why is that when the 'number of the stiffness parameters being larger than a number of system equations', 'the system equations are severely underdetermined'?" The Examiner stated that "[t]he system equations being severely underdetermined is not understood."

Applicants traverse this rejection and respectfully submit that claims 47, 49, and 60 particularly point out and distinctly claim the subject matter which the Applicants regard as the invention, as disclosed in Applicant's disclosure. Definiteness of claim language <u>must</u> be analyzed in light of (1) the content of the application disclosure, (2) the teachings of the prior art, <u>and</u> (3) the claim interpretation that would be given by one of ordinary skill in the art at the time the invention was made. *See, e.g., In re Moore*, 439 F.2d 1232, 1235; 169 USPQ 236, 238 (CCPA 1971). The essential inquiry is whether the claims set out and circumscribe a particular subject matter with a *reasonable* degree of clarity. A claim term that is not used or defined in the specification is not indefinite if the meaning of the claim term is discernible to one skilled in the art. *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004). Further, breadth of a claim is not to be equated with indefiniteness. *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971).

Moreover, the requirements for clarity and precision "must be balanced with the limitations of the language and the science" and "[i]f the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the statute (35 U.S.C. 112, second paragraph) demands no more." *Shatterproof Glass Corp. v. Libbey Owens Ford Co.*, 758 F.2d 613, 225 USPQ 634 (Fed. Cir. 1985); *see also, e.g., Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986). In this regard, as stated in MPEP § 2173.05(a).II, "[i]f the proposed language is not considered as precise as the subject matter permits, the examiner should provide reasons to support the conclusion of indefiniteness and is encouraged to suggest alternatives that are free from objection." The Examiner in the instant case has not provided **reasons** to support the conclusion of indefiniteness, but has instead merely set forth a question coupled with an admission of a lack of understanding. A statement of rejection under any ground requires a *prima facie* showing and a rejection under 35 U.S.C. § 112, second paragraph should "provide ***an analysis*** as to why the phrase(s) used in the claim is 'vague and indefinite'" (*see, e.g.*, MPEP § 2173.02)(emphasis added). Accordingly, it is submitted that, at least upon this ground, the 35 U.S.C. § 112, second paragraph rejection is improper and should be withdrawn.

As to the analysis of definiteness of the claim language in light of the content of the application disclosure, the teachings of the prior art, and the claim interpretation that would be given by one of ordinary skill in the art at the time the invention was made, it is initially noted that, as is common knowledge, if there are fewer measurements available then there are unknown parameters for a system to be modeled, then the parameter estimation problem is said to be "underdetermined." Stated differently, for a linear system having m equations and n unknowns, the system is "underdetermined" if $n > m$ (and is "overdetermined" if $m > n$). Severely

underdetermined system of linear equations include systems wherein $n >> m$ (i.e., far more unknowns than equations, where n represents unknowns and m represents equations). Information which is well known in the art need not be described in detail in the specification. *See, e.g., Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379-80, 231 USPQ 81, 90 (Fed. Cir. 1986). Turning to the "teachings of the prior art," it is noted that printed patents and patent application publication utilizing the terminology "severely underdetermined" do not themselves explicitly define "severely underdetermined" and, instead, utilize such terminology with the understanding that such terminology is understood by those of ordinary skill in the art, much as treatment of other mathematical concepts are not belabored (*see, e.g.*, U.S. Pat. No. 6,526,354, *stating* in col. 11, lines 50-53 that "more complex models require extremely complicated inversions, or may be severely underdetermined by the available data").

Applicant's specification states, *inter alia*, that "[i]n summary, the damage detection method identifies stiffness parameters in structures, which have a small, medium, and large level of damage if the maximum reduction in the stiffnesses is within 30%, between 30 and 70%, and over 70%, respectively" wherein "[a] large level of damage is studied in many examples because this poses the most challenging case, with sever [*sic*: severe] mismatch between the eigenparameters of the damaged and undamaged structures." (¶ [0179]). As noted in ¶ [0180], "[t]he damage detection method as embodied and broadly described herein can be applied to structures that can be modeled with beam elements" and ¶¶ [0181]-[0182] introduce damage detection using changes of natural frequencies "[f]or structures such as beams and lightning masts in electric substations, using only the changes in the natural frequencies can relatively accurately detect the location(s) and extent of damage, even though the system equations are *severely underdetermined* in each iteration." (emphasis added). Relating thereto and by way of example, ¶ [0188] of Applicant's specification cites, with reference to an example of an

aluminum beam test specimen (see FIG. 12), the "*severely underdetermined system equations* (5 equations with 80 unknowns)." (emphasis added). In this example, the number of unknown significantly exceeds the number of equations. As noted above, the requirements for clarity and precision "must be balanced with the limitations of the language and the science" and "[i]f the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the statute (35 U.S.C. 112, second paragraph) demands no more." *Shatterproof Glass Corp. v. Libbey Owens Ford Co.*, *supra*; *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, *supra*. The terminology "severely underdetermined," in context of the knowledge of those skilled in the art, the application disclosure, and the prior art, is submitted to reasonably apprise those skilled in the art both of the utilization and scope of the invention and is submitted to be reasonably precise in view of the subject matter, in compliance with 35 U.S.C. § 112, second paragraph.

5. 35 USC § 112, 1ST PARAGRAPH REJECTION

Claims 47, 49, and 60 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The Examiner stated that these claims contain subject matter "which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." In particular, the Examiner states that "[t]he 'number of stiffness parameters is larger than a number of system equations such that the system equations are severely underdetermined' is not described in the original disclosure."

In determining whether a written description issue exists, the fundamental factual inquiry is whether the specification conveys with reasonably clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. *Vas-Cath,*

Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). The subject matter of the claim need not be described literally (*i.e.*, using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement (*see, e.g.*, MPEP § 2163.02). As noted above, Applicant's specification discloses, *inter alia*, damage detection using changes of natural frequencies "[f]or structures such as beams and lightning masts in electric substations, using only the changes in the natural frequencies can relatively accurately detect the location(s) and extent of damage, even though the system equations are *severely underdetermined* in each iteration" (¶¶ [0181]-[0182])(emphasis added) and discusses an example of an aluminum beam test specimen (see FIG. 12) with "*severely underdetermined system equations* (5 equations with 80 unknowns)." (¶ [0188])(emphasis added). This disclosure, when taken in view of the balance of Applicant's disclosure, does convey, with reasonably clarity to those skilled in the art that, as of the filing date sought, Applicants were in possession of the invention as now claimed. It is noted that the review as to written description is to be conducted from the standpoint of one of skill in the art at the time the application was filed (*see, e.g., Wang Labs. v. Toshiba Corp.*, 993 F.2d 858, 865 (Fed. Cir. 1993)) and should include a determination of the field of the invention and the level of skill and knowledge in the art, there being an inverse correlation between the level of skill and knowledge in the art and the specificity of disclosure necessary to satisfy the written description requirement. *See, e.g., Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379-80 (Fed. Cir. 1986).

Still further, "the examiner has the initial burden, after a thorough reading and evaluation of the content of the application, of presenting evidence or reasons why a person skilled in the art

would not recognize that the written description of the invention provides support for the claims." See MPEP § 2163. In particular, "[i]f applicant amends the claims and points out where and/or how the originally filed disclosure supports the amendment(s), and the examiner finds that the disclosure does not reasonably convey that the inventor had possession of the subject matter of the amendment at the time of the filing of the application, the examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims." (*see, e.g.*, MPEP § 2163 and MPEP § 2163.04). The claim amendments in question were introduced in the Supplemental Amendment filed on December 29, 2008, and did particularly point out where the originally filed disclosure supported the amendments. Accordingly, the Examiner has failed to discharge his burden and has further failed to set forth any factual findings supporting the conclusory allegation of lack of written description. *See, e.g., Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000)(the written description "inquiry is a factual one and must be assessed on a case-by-case basis").

Reconsideration and withdrawal of this 35 U.S.C. 112, first paragraph, rejection is requested for at least the above reasons.

6. 35 USC § 102 REJECTION

Claims 15 and 16 were rejected under 35 U.S.C. 102(e) as being anticipated by Weiss et al. (US 2003/0013541)("Weiss"). Reconsideration and withdrawal of this rejection is requested.

Regarding claim 15, Weiss was alleged to disclose "a system (Fig. 19) for determining stiffness parameters of a structure (shaft 110, paragraph 0057)" comprising "a sensor (1877) arranged to measure vibrations of a structure having a lengthwise much greater in magnitude than cross-sectional dimensional thereof (shaft 110's length versus cross-sectional dimensions, Fig. 11) and output to vibration information (paragraph 0116, lines 1-2)" and "a stiffness

parameter unit (62) for receiving said vibration information (paragraph 0116, lines 1-3), determining natural frequency data or mode shape (vibration frequency, paragraph 0116, lines 4-5; paragraph 0016, lines 6-8) of said structure (paragraph 0116, lines 2-5), and determining the stiffness parameters of said structure using said natural frequency or mode shape data (paragraph 0116, lines 4-5; paragraph 0016, lines 6-8)". The Examiner also alleged that Weiss disclosed "a damage information processor (61) for receiving said stiffness parameters and outputting damage information (data for non-perfect shaft vs. data for perfect shaft displayed via 257, paragraph 0159, lines 18-22, Fig. 25) comprising at least spatial damage information on said structure (symmetry/asymmetry data, paragraph 0160, lines 2-3, represents spatial damage information), said spatial damage information comprising a damage location along said lengthwise dimension (since the problem of asymmetry is along the length of the elongated member, paragraph 0160, lines 2-4)." Regarding claim 16, the Examiner alleged Weiss "further discloses a damage extent processor (61) for determining extent of dame [*sic*: damage] information (257 shows deviations between data of non-perfect shaft and data of perfect shaft, Fig. 25)."

Weiss, par. [0116], frequently cited in the rejection by the Examiner in support thereof, states, in its entirety, the following:

> As shaft 110 oscillates, the motion of the shaft tip as sensed by tip mass and sensor assembly 1877 is recorded by processor 61, and in particular the maximum out-of-plane vertical acceleration or displacement and the vibration frequency are noted.

Weiss relates to the determination of a primary planar oscillation plane of a golf club shaft and discloses that the primary planar oscillation plane may be obtained by applying an impulse to the shaft and by measuring the oscillation of the shaft (see Abstract). Weiss measures the out-of-plane oscillation at a large number of angular positions about the shaft axis, and the principal planar oscillation plane is identified by that pair of opposed angular positions

in which the out-of-plane oscillation is smallest. *Id.* Once the location of the preferred orientation is found, it is marked on the golf club shaft so that the assembled golf club will have the planar oscillation plane in a predetermined orientation. *Id.*

In contrast, in accord with the present disclosure, Applicants provide a method and apparatus for detecting structural damage, and, more specifically, to a method and apparatus for detecting structural damage using changes in natural frequencies and/or mode shapes. *See*, par. [0003] of published patent application serial no. 20050072234 A1.

Illustrative examples of the disclosed concepts is described in the beam examples of pars. [0166] to [180] (see also FIGS. 7-11) and subsequent numerical and experimental verification scenarios (pars. [0184] to [0194]; FIGS. 12-17) and simulations (pars. [0195] to [0203]; FIGS. 18-21). In scenario 1, for example, a 45 cm long aluminum test specimen was divided into 40 elements, each element having a length of 1.125 cm, and was machined on top and bottom surfaces to simulate damage at a lengthwise position of about 10-15 cm, as measured from the cantilevered end (see par. [0187]; FIG. 13). The machining corresponded to 56% of damage (or reduction of bending stiffness EI) along the length of five elements (from the 9^{th} to the 13^{th} element). As shown in FIG. 13, results were obtained with 2-5 frequencies. As is noted by the Applicants in Applicant's specification, the extent of damage detected is slightly lower than the actual extent because the predicted damage occurs at 2 more elements (the 7^{th} and 8^{th} elements) than the actual one arising from the solution of the severely underdetermined system equations (5 equations with 80 unknowns).

As an additional illustration, FIG. 1B shows steps included in a method for detecting structural damage in accordance with aspects of the present concepts, including an initial step (1) measuring one or more eigenparameters, λ_d^k and Φ_d^k, which are then compared with estimated eigenparameters associated with the stiffness parameters, $G_i^{(0)}$ and the differences

between the measured and estimated eigenparameters determined (2). These differences are then used in a sensitivity analysis to establish system equations (5) and (6) and an optimization method (e.g., gradient method, quasi-Newton method, etc.) is then used to find $G_i^{(w)}$ (see, e.g., par. [0134]-[0155]).

In contrast, Weiss (par. [0116]) is describing an oscillation of the tip of a golf club shaft 110 responsive to an impulse acting on the tip. The motion of the shaft tip is sensed by tip mass and sensor assembly 1877 and is recorded by processor 61. The maximum out-of-plane vertical displacement (or alternatively acceleration) is noted and the vibration frequency determined. Weiss discloses that the vibration frequency can be obtained by counting the number times in a given time interval that the vibrating shaft passes a fixed point (see par. [0056]). The Examiner also cites par. [0016], which states that "the vibratory motion of the golf club shaft is analyzed at a plurality of angular positions about the longitudinal axis of the shaft" and "[t]he greater the number of positions, the more accurately the planar oscillation plane--and particularly the principal planar oscillation plane--can be detected." As far as noting the maximum out-of-plane vertical displacement at a plurality of angular positions, FIG. 21 shows out-of-plane displacement plotted in polar coordinates as a function of angle (every 10°) wherein dashed lines 211 occur at the cusps between the lobes (local minima of out-of-plane displacement) and represent the planar oscillation planes (see also par. [0085]). Weiss discloses that, at each angular position, the vibration frequency of the shaft provides a measure of its stiffness. FIG. 25 shows a shaft frequency (CPM) vs. shaft angular position, showing square data points for the measured shaft.

FIG. 2 of Weiss shows the normalized horizontal and vertical displacement of the vibrating tip of shaft 10 as a function of time over two oscillation cycles, with horizontal displacement (x) represented by the solid line 20 and vertical displacement (y) represented by

the broken line 21 (see also [0061]). FIG. 3 shows the same displacement of the tip of shaft 10 as a phase plot 30, over two cycles, in x and y. FIG. 4 shows the phase plot 40 after fourteen cycles. The phase plot 40 of the tip motion after a sufficient number of cycles is substantially a rectangle and the orientation of the planar oscillation plane is that of one of the two orthogonal axes of that rectangle, where each axis of a rectangle is defined as a line midway between, and parallel to, a respective pair of sides of the rectangle (see par. [0062]).

Claim 15 recites, *inter alia*, a sensor arranged to measure vibrations of a structure having a lengthwise dimension much greater in magnitude than cross-sectional dimensions thereof and to output vibration information, a stiffness parameter unit for receiving said vibration information, determining natural frequency data of said structure, and determining the stiffness parameters of said structure using said natural frequency data, and a damage information processor for receiving said stiffness parameters and outputting damage information comprising spatial damage information on said structure, "*said spatial damage information comprising a damage location along said lengthwise dimension of said structure.*" Weiss does <u>not</u> disclose or suggest any methodology by which any alleged damage along a club shaft could be resolved to provide spatial damage information comprising a damage location along a lengthwise dimension of said structure. The Examiner cites ¶ [0160] of Weiss, which states:

> [0160] While the invention has been described so far in terms of golf club shafts, it can be used to determine the symmetry/asymmetry, roundness, straightness and/or stiffness of any elongated member, including, but not limited to, baseball bats, billiard cues, arrows, fishing rods, or any structural member.

This citation, however, fails to, as alleged, disclose a damage information processor for receiving said stiffness parameters and outputting damage information comprising spatial damage information on said structure, said spatial damage information comprising a damage location along said lengthwise dimension of said structure. The statement that the noted

"symmetry/asymmetry" in ¶ [0160] "represents spatial damage information . . . comprising a damage location along said lengthwise dimension" because "the problem of asymmetry is along the length of the elongated member" is unsupported by Weiss. Weiss discloses in ¶ [0007] that "[t]he *asymmetry* of golf club shafts can result from nonsymmetrical cross sections (shafts whose cross sections are not round or whose wall thicknesses are not uniform), shafts that are not straight, or shafts whose material properties vary around the circumference of the shaft cross section" and that "it is substantially impossible to build a perfectly symmetric golf club shaft" and that, accordingly, "it makes sense, if possible, to analyze each golf club shaft in a set of golf clubs to understand its asymmetric bending or twisting behavior and construct the golf clubs in the set to maximize consistency from club to club within a set and from set to set within a brand." (emphasis added). Thus framing the problem, Weiss sets out to disclose a system to statically test a golf club shaft, wherein (*see* FIG. 11) the shaft 110 is mounted in chuck 76 and the tip of shaft 110 is deflected and restrained under the lip 120 of the shaft tip restraining arm 92 so that the restoring force tending to straighten shaft 110 can be measured by load cell 91 (*see* ¶ [0078]). The chuck 76 is then rotated while the restoring force is recorded by computer 61 as a function of angle, which is determined by potentiometer 84, to which a known voltage is applied. *Id.* Using known voltage divider techniques, the changing resistance during the shaft rotation is translated to a changing voltage and converted to an angle. *Id.* Weiss determined, empirically, that "the point of maximum *asymmetry* of the shaft, representing the hard side of the principal planar oscillation plane," is within the quadrant that is facing upward when the maximum upward force is measured (*see* ¶ [0079])(emphasis added). Accordingly, the angle of the maximum upward force is therefore recorded in the disclosed static portion of the test. Thus, in discussing asymmetry, Weiss is ***not*** determining *a damage location along said lengthwise dimension of said structure*, but is instead taking a ***gross measure*** of asymmetry defined entirely

by an angle. There is ***no*** lengthwise dimension damage location information. This is further evident in FIG. 25, which shows a sample of a printout giving various characteristics of a tested shaft 110 (*see* ¶ [0157]). The printout includes a graph 251 showing the results of the load symmetry test discussed above and showing the *load symmetry index* (LSI), with the normalized load and stiffness being defined relative to the angle of the shaft (*see* ¶ [0159])(emphasis added).

Weiss's method can **only** give a global stiffness in the circumferential direction and **cannot** reveal anything about the stiffness along the structure. Weiss does provide teachings relating to symmetry/asymmetry, as noted above, but these teachings are limited to circumferential symmetry/asymmetry and do not include spatial damage information comprising a damage location along said lengthwise dimension of said structure. Again, Weiss discloses ***circumferential*** symmetry/asymmetry, shown in FIG. 25, including vibration characteristics in the "logo-up" position and in the principal planar oscillation plane, respectively, as located. Plot 257 shows vibration frequency ***as a function of angular position***. In plot 257, the circular data points represent a "perfect" shaft in which the stiffness, and the frequency, ***is the same at all angles,*** while the square data points show the frequency data for the shaft being measured. By way of example, Weiss describes in par. [0057] that "[t]he stiffness of the shaft can then be characterized by the value of k ***at each angle***" (emphasis added). Weiss continues on in par. [0058] to state that "***[a]t each angular position,*** a load test can also be administered, by deflecting the shaft through a fixed distance, d, transverse to its longitudinal axis and measuring the restoring force, F, generated." (emphasis added). Continuing, Weiss states that "[f]rom the force, F, and the spring constant, k, determined above, one can determine the deviation, δ, which is a measure of the straightness of the shaft, from the relation F/k=d+δ" and that "[t]he straightness of the shaft can then be characterized by the value of δ ***at each angle***." Thus, Weiss does ***not*** disclose or suggest "spatial damage information comprising a damage location

along said lengthwise dimension," as alleged by the Examiner. Instead, Weiss discloses determination only of the "spine" of the club shaft – the angular position of the principal oscillation plane (*i.e.,* the angular orientation of shaft 10 in which, if the initial displacing force F were applied along that orientation, shaft 10 would oscillate substantially only along that orientation, with the tip tracing back and forth substantially along a line)(*see, e.g.*, par. 0061; FIG. 4). For example, FIG. 21 shows out-of-plane displacement plotted in polar coordinates ***<u>as a function of angle</u>*** (every 10°) wherein dashed lines 211 occur at the cusps between the lobes (local minima of out-of-plane displacement) and represent the planar oscillation planes (*see also* par. [0085]). Weiss discloses that, ***<u>at each angular position</u>,*** the vibration frequency of the shaft provides a measure of its stiffness. Weiss provides only a **gross measure** of stiffness that is <u>independent</u> of axial length of the shaft and is <u>unable</u> to resolve a location of damage or a change in stiffness at a point along a length of the shaft.

Likewise, as to claim 16, Weiss does not disclose or suggest that, further to a damage information processor for receiving said stiffness parameters and outputting damage information comprising spatial damage information on said structure, said spatial damage information comprising a damage location along said lengthwise dimension of said structure, and outputting extent of damage information.

The factual determination of lack of novelty under 35 U.S.C. §102 requires the identical disclosure in a single reference of each element of a claimed invention such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Helifix Ltd. v. Blok-Lok, Ltd,* 208 F.3d 1339 (Fed. Cir. 2000). The Examiner has failed to discharge the burden of setting forth a *prima facie* case of anticipation and, moreover, Weiss fails to disclose each element of a claimed invention such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. Accordingly,

Weiss ***fails*** to disclose (or suggest) under 35 U.S.C. § 102 the subject matter of claims 15-16 for at least the above-noted reasons and withdrawal is requested for at least the above-noted reasons.

The factual determination of lack of novelty under 35 U.S.C. §102 requires the identical disclosure in a single reference of each element of a claimed invention such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Helifix Ltd. v. Blok-Lok, Ltd*, 208 F.3d 1339 (Fed. Cir. 2000). Weiss is respectfully submitted not to anticipate claims 15-16, which were rejected under 35 U.S.C. § 102(e). Withdrawal of this rejection is requested at least upon the above grounds.

Further, it bears emphasis that claims must be read as they would be interpreted by those of ordinary skill in the art. *In re Sneed*, 710 F.2d 1544, 218 USPQ (Fed. Cir. 1983). The "broadest reasonable interpretation" of the claims permitted by law <u>must</u> be consistent with "the interpretation that those skilled in the art would reach." *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). In this vein, "[c]laims are not to be read in a vacuum, and limitations therein *are to be interpreted in light of the specification in giving them their 'broadest <u>reasonable</u> interpretation'*." *In re Marosi*, 710 F.2d 799, 802, 218 USPQ 289, 292 (Fed. Cir. 1983)(*italics added*). It is respectfully submitted that one skilled in the art would <u>not</u>, in light of the specification, interpret Weiss's gross measurement of symmetry/asymmetry (i.e., the angle noted above) as disclosing the claimed "spatial damage information comprising a damage location along said lengthwise dimension of said structure." Moreover, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

The Applicant respectfully submits that the claims are in a condition for allowance and action toward that end is earnestly solicited.

It is believed that no fees are presently due further to the noted two-month extension of time. However, should any fees be required (except for payment of the issue fee), the Commissioner is authorized to deduct the fees from the Nixon Peabody Deposit Account No. 50-4181 (266923-000007USPT).

Respectfully submitted,

Dated: September 24, 2009

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